# Flu vaccine protects mothers, babies

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A study showing that the influenza vaccination of pregnant HIV-uninfected and HIV-infected women is safe and protects the women against confirmed influenza illness, has been published by researchers from Wits University and the National Institute for Communicable Diseases (NICD).

The study, listing the finding of the safety and efficacy of vaccination of pregnant women with influenza vaccine, is published in the 4 September 2014 edition of the prestigious scientific medical journal, The *New England Journal for Medicine*.

This landmark study, titled: Influenza vaccination of pregnant women and protection of their infants is the first randomised-controlled trial (i.e. the highest level of scientific evidence) globally to show that, besides it being safe for the influenza vaccination of pregnant HIV-uninfected and HIV-infected women, it also protects the young infants of vaccinated mothers against influenza illness.

The results from the study by Professor Shabir Madhi, Professor of Vaccinology at Wits University and Executive Director of the National Institute for Communicable Diseases, and his team are the first to show that influenza vaccination of pregnant women was associated with 50% protection against influenza illness in HIV-uninfected women and 70% protection in HIV-infected women.

The protection of HIV-infected pregnant women, who constitute approximately one-third of all pregnant women in South Africa, was particularly important as they were disproportionately affected by severe illness during the swine flu pandemic of 2009.

"In addition to the protection of pregnant women, the study also showed that the infants born to mothers who received the influenza vaccine were also less likely to develop influenza confirmed illness until six months of age. This included 48% fewer episodes of influenza illness in infants born to influenza-vaccinated HIV-uninfected women and a similar trend observed in those born to HIV-infected women," says Madhi.

The mechanisms by which the infants were protected were either due to transplacental acquisition of maternal antibodies or because of reduced

transmission of the influenza virus from the mother to the baby. Between 30-50% of mothers of infants with the influenza illness, were themselves affected by influenza illness at the time as when their child was ill.

"The protection of the infants less than six months of age against the influenza illness is of high public health importance, as these infants are the most severely affected by influenza illness in high-income and low-middle income countries; and there is no licensed influenza vaccine for this age-group," says Madhi.

Previous studies from Soweto have shown that the risk of hospitalisation for influenza illness in infants under six months of age was approximately 35-fold greater compared to adults; and infants were also the greatest at-risk age-group for influenza-associated death in South Africa. Globally each year, the influenza illness is estimated to cause up to 196 000 deaths in children under five years of age, with a large proportion of these deaths likely occurring in the first six months of life.

The findings of this study are also important in supporting the 2013 World Health Organization recommendation to prioritise pregnant women for influenza vaccination.

This was premised in recognition of pregnant women being the highest adult risk-group for severe influenza illness during seasonal influenza epidemics, as well as during influenza pandemics such as the swine flu pandemic of 2009/10 and previous pandemics.

The findings from this newest study are expected to result in a paradigm shift with regard to advocacy and adoption of influenza vaccination of pregnant women in low-middle income countries, to protect both the mother and her child.

**More information:** The complete paper is available online: www.wits.ac.za/files/nrihc_278743001409810314.pdf